

REMARKS

Reconsideration is respectfully requested in light of the foregoing amendments and remarks which follow. The amendments accompany a request for continued examination (RCE). In addition in the RCE, entry of the amendments filed pursuant 37 CFR 1.116 is requested. The amendments address points raised in the Final Office Action and the Advisory Office Action mailed March 3, 2010.

Claims 1-4 are before the Examiner. Claim 1 has been amended to recite additional characteristics associated with the structural modification and to recite the presence of additional modifying groups. Claim 5 was previously presented. Claim 6 has been added. It specifies the filler amount. This amount is associated with the high tear resistance results achieved. Support is found throughout the specification as filed including Tables 2, 5 and 6 on pages 13 and 17 of the specification, respectively.

In Advisory Action, the rejection of claims 1-4 under 35 U.S.C. 112, second paragraph, as being indefinite is withdrawn. Applicants note this with appreciation.

Claim 4 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. Applicants respectfully traverse.

Reconsideration is respectfully requested. The case law in this area is quite fact dependent. No case was cited by the Examiner which was on all fours with the present facts. The situation here involves a inherent property of a "material", i.e. density. The density value recited in the claim appears in the specification. (The rejected claim is a dependent claim.) The issue appears to be is there support for density values above the value specified in the claim. A range of increasing density values result from the preparatory process (destructuring process). The upper limit is clearly not infinite. The pyrogenic silica subjected to destructuring has an upper limit. Silica can only become so dense. (Claim 5 recites an upper limit, which is supported.)

The Examiner appears to be concerned with the existence of support for the “continuum” of density values between the end points or above the threshold value.

It is respectfully submitted that when the dependent claims are read in their entireties, it is clear that Applicants are in possession of the subject matter described by dependent claim 4 and 5 –surface modified destructured pyrogenic silica. A range of increasing density values is evident from the specification. Destructuring of pyrogenic silica increases density and that density would increase with time up to a limit defined by the degree of destructuring possible for pyrogenic silica. (Claim 5 recites a numeric upper limit. It would be understood that for claim 4 that an upper limit exists; it can be no greater than what the destructuring process permits. The Examiner does not appear to be reading the claim in its entirety.

The structurally modified pyrogenic silica results from roller compression or an intensive milling process which goes beyond standard particle size reduction. The destructuring modification modifies physical properties of the pyrogenic educt. See US 6,193,795 (Nargiello et al.). See FIG. 1-3. AEROSIL is the untreated pyrogenic silica. The effect of the destructuring causes dramatic changes, e.g. AEROSIL 300 goes from a bulk density of 25 g/l to 308 g/l. Note also the effects on DBP absorption and agglomerate size resulting from the destructuring process. The Tables (col. 7 and 8) suggest that the bulk density increase with the time of treatment (destructuring) while the DBP and agglomerate size values decrease. There appears to be a suggestion of a “continuum” of values, a range. There is also a clear suggestion that these properties are inherent with the pyrogenic silica material and its degree of destructuring (time dependent). The density can increase only to a limit defined by the material treated, the pyrogenic silica itself. Claim 5 specifies an upper limit and lower limit vale which are exemplified in the specification. Claim 4 specifies only a lower limit. Both are dependent claims.

If Applicants are deemed to be in possession of the product described by claim 1, the independent claim, upon which both claims 4 and 5 depend, why would they not be in possession of these product which merely recite taught and densities associated with the destructured material.

Withdrawal of the rejection of claim 4 is respectfully requested.

Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,331,558 to Azechi et al. Applicants respectfully traverse.

Claim 1, as further amended, describes a silicone rubber having high tear propagation resistance, containing a reinforcing amount of a structurally modified, methyl- and vinyl-modified hydrophobic pyrogenic silica having a BET between 10 and 1000 m.²/g and a DBP value percent of < 200 or not determinable. The methyl- and vinyl- groups correlate with high tear propagation resistance. See Table 6, especially Example 3.

The Azechi et al. patent has again been considered. A silicone rubber product like that claimed was not prepared. The comments made by the Examiner in the Advisory Action suggests that silica employed by Azechi et al might “inherently” have the properties accompany the compound. The Examiner noted that the argued silica properties, e.g. DBP values did not appear in the claims. This has been remedied.

The Examiner further noted in the Advisory Action that Azechi et al. mention the treatment of silica by mechanical agitation. Applicants urge that mere conventional mechanical agitation would not suffice to cause destructuring like that required by the claims. The examiner’s attention is directed to Nargiello et al., above, especially, the paragraph starting on line 20 in col. 2, the paragraph starting at line 25 in col. 3 and the following paragraphs and the paragraph starting on line 37 in col. 5 and the following paragraphs. including those in cols. 7 through 9. It is clear that a conscious decision has to undertaken to destructure pyrogenic silica and that the process is irreversible. See col. 5 at lines 47-49.

Further, there is no disclosure in Azechi et al. that their products have the advantages shown in the present Table 6. The viscosity values taught in the Azechi et al patent are distinct from those disclosed. Since “low structure” product correlates with viscosity, there is no reason to believe that the Azechi et al.’s products have a “low” structure like that claimed.

For a reference to be anticipatory, it must teach each and every element required by the claims. Withdrawal of the rejection is respectfully requested.

Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,331,558 to Azechi et al. in view of U.S. Patent No. 6,384,125 to Bergstrom et al. Applicants respectfully traverse.

The deficiencies of Azechi et al. are discussed above. It is respectfully submitted that Bergstrom et al. does not remedy the deficiencies relative to “low structure” product. Also Bergstrom et al. provide no guidance which would lead one to select both methyl and vinyl groups and low structure pyrogenic silica, which leads to improved tear resistance of silicone, especially to the degree shown and achieved by Applicants.

Bergstrom et al rather teach that the use of modified fillers having a pH of 5.0 to 10 results in less decomposition in silicone mixtures than do the use of lower pH silica fillers. A neutralization step is taught. The silica used in the filler is colloidal or precipitated silica. See col. 3. Pyrogenic low structure silica (Cabot MS75D) is mentioned as a control. There is no evidence that Cabot MS75D has a “low” structure.

Tables 3 and 4 (Col. 13, 14) of Bergstrom et al. do not suggest the selection of the materials needed for the claimed product or the possibility of the advantages established by Applicants and shown in Table 5 and 6. There is no teaching that the presence of affixed methyl and vinyl groups on a pyrogenic silica surface results in a high tear propagation resistance silicone rubber product.

A proper prima facie case of obviousness has not been established. Further, there is no expectation, based on what the references suggest and teach, that the results shown in Table 6 could be achieved.

Withdrawal of the rejection is respectfully requested.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,331,558 to Azechi et al. in view of U.S. Patent No. 6,384,125 to Bergstrom et al. as applied to claim 1, and further in view of U.S. 2002/007412 to Kobayashi. Applicants respectfully traverse.

The deficiencies latent in Azechi et al. are discussed above relative to anticipation. It is respectfully submitted that the teaching of Kobayashi et al. do not remedy those deficiencies.

Kobayashi et al. teach a water repellant silicone coating agent. A very high tear propagation resistance for a vulcanized silicone rubber product is not discussed or taught. A “low” structure pyrogenic silica is not identified. The density values shown in paragraph [0023] are noted. Note US 5,160,470 shows the use of a densified silica product in cement. It is not clear how the paragraph [0023] teaching suggests the preparation and selection of vinyl-modified hydrophobic pyrogenic silica as a filler that imparts to a silicone rubber product containing it a very high tear propagation resistance.

It is respectfully submitted that the teachings of the references, taken alone or in combination, are incomplete relative to the invention as claimed. It is submitted that there is a failure to establish a proper prima facie case of obviousness. Withdrawal of the rejection is respectfully requested.

Claims 1-3 are rejected on the ground of non-statutory obviousness type double patenting as being unpatentable over claims 1-2 of U.S. Patent No. 7,563,839 (‘839). Applicants respectfully traverse.

The claims have been amended to maintain a clear line of demarcation between the applications.

Claim 1 of the ‘839 patent is directed to a composition of matter comprising a silicone rubber, a structure- modified hydrophobic pyrogenic silica as filler and a conductive furnace black. There are three “wherein” clauses. One specifies the silica as a silanized, structure-

modified pyrogenically prepared silica with dimethylsilyl and/or monmethylsilyl groups affixed to the silica. The second specifies the silicone rubber as LSR. The third specifies the composition as a vulcanized silicone rubber mixture.

Claim 2 further limits claim 1 by specifying the manner of preparing the silica and reciting additional characteristics, e.g. surface area.

The rejected claims do not require the presence of conductive carbon black. The rejected claims do not require the presence of affixed dimethylsilyl and/or monmethylsilyl group.

Further, the amended claims specify DBP values not taught in either claims 1 or 2 of the '839 patent and require the presence of both affixed methyl and vinyl groups. The presence of both these affixed groups correlate with high tear resistance shown for Example 3 in present Table 6. The claims of the '839 patent relied upon as a teaching are not suggestive of a product like that now claimed.

Reconsideration and withdrawal of the rejection is respectfully requested. The presently claimed product does not have conductive carbon black or does it require both vinyl and methyl groups affixed to the destructured surface. The results shown in instant Table suggest that the claims describe a patentably distinct product. There is a clear line of demarcation.

Claims 1-2 are provisionally rejected on the ground of non-statutory obviousness type double patenting as being unpatentable over claims 1-2 and 7 of copending Application No. 10/591,609 ('609). Applicants respectfully traverse.

It is noted that the '609 application has been allowed. See Public Pair (uspto.gov). There is an Examiner's Amendment to claim 8. The allowed claims do not correspond to those appearing in US 2007/0191237 A1 (the published '609 application) and relied upon as a teaching. Claim 1 is a product by process claim and depends on claim 2, which describes a preparatory process not taught in the claims relied upon in the statement of rejection. Claim 2 as

allowed is an independent claim. It requires the performance of specified steps.

The present claims do not require the actual performance of any steps, e.g. post grinding and heat treatment steps.

Recent changes in the case law relative to infringement of product by process suggest that the process limitations have to be considered in the determination of infringement.

Reconsideration is respectfully considered. The rejection is based on claims of the '609 that have been amended. There is a clear line of demarcation. There is no extension of a patent monopoly.

Request for Interview

Applicants respectfully request either a telephonic or an in-person interview should there be any remaining issues.

CONCLUSION

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Therefore, it is respectfully requested that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

It is not believed that extensions of time are required, beyond those that may otherwise be provided for in accompanying documents. However, in the event that additional extensions of time are necessary to prevent abandonment of this application, then such extensions of time are hereby petitioned under 37 C.F.R. 1.136(a), and any fees required therefore are hereby authorized to be charged to **Deposit Account No. 02-4300, Attorney Docket No. 032301.592.**

Respectfully submitted,
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